

DOCUMENT RESUME

ED 264 801

HE 018 983

AUTHOR McCord, Joan
TITLE At the Brink: Baseline Data. The Microcomputing Program at Drexel University.
INSTITUTION Drexel Univ., Philadelphia, PA. Microcomputing Program.
REPORT NO MWPS-E-84-2
PUB DATE Dec 84
NOTE 7p.; Paper originally presented as "A First Byte of the Apple" at the Social Effects of Computers Conference (Rochester, NY, June 15-16, 1984). For related documents, see HE 018 984-985.
AVAILABLE FROM Drexel University, Working Paper Series, Microcomputing Program, Office of the Vice President for Academic Affairs, Philadelphia, PA 19104.
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *College Faculty; College Freshmen; *College Students; *Computer Literacy; Graduation Requirements; Higher Education; Intellectual Disciplines; *Microcomputers; *Sex Differences; Student Attitudes; Teacher Attitudes; *Use Studies
IDENTIFIERS *Drexel University PA

ABSTRACT

Surveys of faculty and students at Drexel University were conducted to assess the effects of the university's decision in late 1982 to require all incoming freshmen to buy computers. A May 1983 survey determined faculty experiences with computers, their teaching preferences, and educational backgrounds. Based on responses from 328 faculty (93%), it was found that most engineers and scientists used computers, and younger faculty were most likely to have computing experience, except in the liberal arts. The fall 1983 survey of freshmen and juniors included measures of anger, anxiety, physical pain, stress, self-esteem, victimization, value orientations, active use of leisure time, and attitudes toward computer-related crimes. Sex differences in exposure to computers were found. Male students were more likely than female students to have: taken computer courses, played computer games, used computers for data analysis or writing, and written computer programs. Among freshmen males, those who had used computers often tended to make active use of their leisure time. Junior men with the most computing experience also tended to be self-confident, optimistic, and to have little anxiety, while for junior women, computing was not associated with self-confidence, optimism, or low anxiety. (SW)

* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *

At the Brink: Baseline Data

Joan McCord
Department of Psychology and Sociology
Drexel University

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

- ☒ This document has been reproduced as received from the person or organization originating it.
- ☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS
MATERIAL HAS BEEN GRANTED BY

~~Drexel University~~

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)."

At the Brink: Baseline Data

**Joan McCord
Department of Psychology and Sociology
Drexel University**

**MWPS E 84-2
December, 1984**

Requests for copies of papers in the Microcomputing Working Paper Series should be sent to:
Working Paper Series, Microcomputing Program, Office of the Vice President for Academic
Affairs, Drexel University, Philadelphia, PA 19104.

At the Brink: Baseline Data*

Drexel University made a dramatic decision late in 1982. The President announced that all incoming Freshmen of the following year would be required to buy computers. At the time the announcement was made, several committees had held many meetings in hopes that they could discover ways to increase faculty interest in learning how to use computers. The committee I chaired had surveyed computer facilities and faculty computing skills within the university. Both were scarce, and we were working on ways to entice the faculty to borrow computers when the announcement was heard.

For a couple of months, the halls were filled with rumors and jokes about the policy. The faculty appeared to be seriously divided regarding an appropriate response. Late in March, I was asked to be in charge of evaluation.

I began to read anything I could get that even vaguely related to effects of computing in an academic environment. I discovered that many people had strong opinions, but few had data. Drexel began to change that situation.

In May 1983, a month after a computer had been selected for Drexel students, faculty completed questionnaires asking about their experiences using computers, and about their teaching preferences and educational backgrounds.

Among the 353 full-time faculty, 328 (93%) responded. We learned from these responses that less than half the faculty had used computers even to the extent of reading printouts. We learned that if the University were separated into four sections -- faculty in the College of Engineering, faculty in the College of Science, faculty in the College of Business and Administration, and three smaller colleges in which various Liberal Arts and Social Sciences are taught -- the division revealed differences related to computing.

Whereas most engineers and scientists had been using computers, the engineers tended to be delighted with the prospect of having students own computers but scientists tended to be wary.

Except in liberal arts, younger faculty were most likely to have computing experience.

Those who had already learned computing stood out as mavericks in other ways. For example, computer buffs among the engineers had continued taking courses after acquiring a doctoral degree; among natural scientists, those who used computers the most tended also to have

* This paper was presented as "A First Byte of the Apple" at The Social Effects of Computers, conference held June 15-16, 1984, at the University of Rochester.

strong interests in the arts; among faculty in the liberal arts, those who used computers the most were more likely to have taken technical courses (e.g., accounting, statistics, formal logic); and among faculty in the College of Business, those who used computers the most combined technical backgrounds with knowledge of foreign languages and the ability to read music.

Some of the faculty seemed worried about faculty with computing being introduced as a basis for promotions. Among those familiar with computing, Associate Professors were more likely than either Full Professors or Assistant Professors to be pleased with the decision; among those unfamiliar with computing, Associate Professors were less likely to be pleased than Full Professors or Assistant Professors.

In Fall of 1983, Freshmen and Juniors were asked to complete questionnaires. About 53% of the juniors (who would not be allowed to buy the Drexel Macintosh) and about 79% of the freshman responded. Students answered questions that resulted in measures of anger, anxiety, stress, pain, self-esteem, victimization, carelessness, crime-exposure, instrumental and expressive value-orientations, active use of leisure time, optimism, orientation toward people, and attitudes toward white-collar crimes committed through computers.

Analyses of responses to these questionnaires showed that juniors were more likely than freshmen to have programmed in COBOL or FORTRAN, but freshmen were more likely than juniors to have written programs using BASIC.

Sex-related differences in computing were found at Drexel. Males in each class were more likely than females to have taken courses in computing, to have played games using a computer, and to have used computers for data analysis or writing. Males were also more likely to have written programs, and they were more likely to have graduated from high schools that offered courses in computing. (The data do not show whether the high schools themselves differed or whether the reported difference was due to males being more aware of computers.)

Sex-related differences extended beyond a difference in the amount of exposure males and females had to computing. Among freshmen males, those who had used computers often also tended to make active use of their leisure time. Freshmen females who had used computers were no more likely to make active use of their leisure time than those who had not used computers; they were, however, more often exposed to crime. Junior men with the most computing experience also tended to be self-confident, optimistic, and to have little anxiety. Among junior women, computing was not associated with self-confidence, optimism, or low anxiety.

Data on health suggest that reports of physical problems associated with secretarial use of computers should be scrutinized critically. Prior to the distribution of computers and despite the fact that women were less likely to have used computers, women were more likely than men to report having backaches and eye pains. This information will be particularly important for evaluating reports of physical problems seemingly associated with computing.

Students received their computers at the end of the Winter term. Three weeks after distribution of the Macintosh, freshmen were asked to answer the first "post-Mac" questionnaire. About 53% did so. Those who answered the second questionnaire did not differ from those who had answered only the first in terms of computing experience, values, use of leisure time, or optimism (at least as measured in the base line questionnaires). But the respondents had higher grades, expressed less anxiety, were less likely to be angry, and gave higher priority to people.

Reports on young children (e.g., at the Bank Street School) seemed to show that computers might increase student interaction. At Drexel, in the wake of successful distribution of machines, administrators began to notice clusters of students helping one another. On the second questionnaire, students were asked where they turned for help when they ran into difficulty with the Macintosh. Their answers showed that close friends were by far the most common source of help for problems with computing.

To see whether this helping pattern was particular to use of the computers, the students were asked where they had turned for help in their courses during the prior term. Close friends were also the most common source of help for problems with courses.

Slightly over half the respondents reported that other students had asked them for help in using computers. An even higher proportion, however, reported being asked for help in course work.

Students reported having little trouble learning how to use the Macintosh. About three out of four students indicated that they were pleased with owning the machine. Nevertheless, less than half were pleased by the amount of time they expected to spend using a computer during the coming term. Furthermore, students expressed less satisfaction with their first computing course than with their first math course, their first composition course, or their first research course.

Almost half reported that someone had asked to buy their computer. Over 90% said they planned to keep it after leaving Drexel.

Students were asked their opinions about a series of actions that could be performed by youths penetrating a computer system. These actions included redistributing payroll checks, changing supply codes so that wrong parts were shipped to domestic military installations, deleting criminal records, changing a formula so that a day's production of ice cream tasted bitter, trading lists of potential donors for political campaigns, changing a scoreboard in a major collegiate game, sending telephones to an empty warehouse, and collecting 2 cents from other people's bank accounts. One in five of the women and more than two out of five men thought at least one of these actions was "a clever prank." Only in response to the questions about military supplies and about deleting criminal records did a majority of the students judge the actions "terribly wrong."

Only a small proportion of the students believed that copying software bought by a friend was terribly wrong; over half thought this type of behavior clever. A similarly small proportion of students believed it terribly wrong to use a copier to duplicate a whole book bought by a friend, though a smaller proportion (about a third) thought such copying clever.

Drexel's study of the impact of computing has only begun. We will be looking at effects on the use of time, on interaction, on beliefs, and on attitudes. We will also be monitoring the spread of computing through the educational programs and trying to learn about the effects of this spread.